RECOMMENDATIONS REGARDING SUPPLEMENTAL PRACTICE EXPENSE DATA SUBMITTED FOR 2001

Evaluation of Survey Data for Vascular Surgery Physical Therapy

PREPARED FOR:
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Table of Contents

This report discusses the supplemental PE surveys conducted for vascular surgeons and physical therapists. We present a brief background on the criteria presented in the May 3, 2000 Interim Final Rule, our evaluation of the survey of vascular surgeons, our evaluation of the survey of physical therapists, and some final thoughts for HCFA to consider.

I. BACKGROUND

The May 3, 2000 Interim Final Rule published in the *Federal Register* presents the criteria to be used in evaluating supplemental surveys. This report provides an evaluation of the supplemental surveys conducted by the American Physical Therapy Association (APTA) for physical therapists and The Society for Vascular Surgery/American Association of Vascular Surgery (SVS/AAVS) for vascular surgeons with respect to these criteria. Based on these evaluations and The Lewin Group's independent assessment of the data, we include our recommendations on whether or not HCFA should accept the supplemental practice expense data submitted by these specialty groups and use these data in the calculation of practice expense RVUs for CY2001.

The Interim Final Rule specified five criteria for evaluating supplemental survey data.

1) ***Confidentiality:*** Groups conducting surveys must ensure the confidentiality of the sample and not know the names of the individuals selected to be surveyed.

2) ***Survey Instrument and Protocols***: Groups must conduct the survey based on the SMS survey instruments and protocols, including administrative, follow-up, and definitions of practice expenses and hours worked.

3) ***Survey Contractor:*** Groups must use a contractor that has experience with the SMS survey or who has experience successfully conducting multi-specialty surveys of physicians using nationally representative random samples.

4) ***Level of Precision:*** Ratio of standard error of the mean to the mean as expressed as a percent must not exceed 10 percent, for overall practice expenses or practice expenses per hour.

5) ***Nationally Representative Survey of the Target Population of Physicians*:**

    a) **Random sample from complete nationwide listing**- Groups must draw the sample from AMA's Masterfile if possible. For non-physician groups not included in the Masterfile, a nationally representative sample of members and non-members must be developed. At a minimum, these groups should include former members in their sample.

    b) **"High" response rate-** Interim Final Rule used 80 to 90 percent as an example of a high response rate.

II. BRIEF COMMENTS ON THE CRITERIA

If response rates are low, national representativeness is clearly the most difficult criteria to demonstrate. However, the rule does note that if either of the two key conditions under requirement 5, Nationally Representative Survey, are not achieved, then the potential impacts of the deviations upon national representativeness must be explored and documented.

The rule goes on to state that

> "[d]ifferential weighting of subsamples may improve the representativeness. Minor deviations from national representativeness may be acceptable...We believe that it is impossible and impractical to set rigid cutoffs for most of these criteria, especially for national representativeness."

It is within this context, that we evaluated the surveys and developed our recommendations.

III. EVALUATION OF THE VASCULAR SURGERY SUPPLEMENTAL PE SURVEY

1) ***Confidentiality***
2) ***Survey Instrument and Protocols***
3) ***Survey Contractor***

The Lewin team worked closely with SVS/AAVS to find a contractor and develop the survey instrument. Both SVS/AAVS and APTA used the same survey contractor. As HCFA is aware, none of the previous SMS contractors expressed a willingness to conduct the supplemental practice expense surveys. The survey contractor used was one previously used by Lewin with good results. We maintained contact with the survey contractor throughout the process to ensure the successful implementation and completion of each survey effort.

We believe that the contractor used protocols similar to those used by SMS contractors. A letter and practice expense worksheet were sent prior to attempting to contact the potential respondent by phone. The contractor did a minimum of four follow-up phone calls and had a toll-free number for respondents to call so that they could complete the survey at their convenience.

The AMA provided Lewin with a random sample of vascular surgeons from the Masterfile. The sample was obtained directly from the AMA and sent by Lewin directly to the survey contractor. We believe that SVS/AAVS adhered to HCFA's confidentiality requirements and were not aware of the physicians included in the sample.

Lewin, with input from SVS/AAVS, developed the survey based on the 1999 SMS survey. The 1999 SMS survey was used with only minor modifications. We added some questions at the request of SVS/AAVS. However, the basic practice expense and hours-worked questions in the SMS survey were essentially unchanged.

- The Lewin team is satisfied that the SVS/AAVS survey met the requirements for ***Confidentiality, Survey Instrument and Protocols,*** and ***Survey Contractor***.

4) ***Level of Precision***[1]

The Lewin team compiled the results from the SVS/AAVS survey and computed measures of level of precision for total practice expenses per hour and total practice expenses. As described in the May 3rd Interim Final Rule, the level of precision is measured by the standard error of the mean divided by the mean expressed as a percentage. This measure should not exceed 10 percent. The relevant SVS/AAVS survey estimates are:

Level of Precision for Total Practice Expense per Hour for 1999 = 7.1%
Level of Precision for Total Practice Expenses for 1999 = 8.4%

- Both level of precision measures for the SVS/AAVS supplemental PE survey meet the ***Level of Precision*** specified in the May 3rd Interim Final Rule.

5) ***Nationally Representative Survey of the Target Population of Physicians*:**

a) **Random sample from complete nationwide listing**

The sample for the SVS/AAVS survey was derived from AMA's Masterfile as required by HCFA.

- The survey of vascular surgeons by the SVS/AAVS satisfied the requirement for a ***random sample from a complete nationwide listing*** of vascular surgeons.

b) **"High" response rate**

The SVS/AAVS survey achieved a low response rate. As noted in our presentation of the survey results to HCFA, we calculate that only approximately 14% (N=57) of potentially eligible respondents completed the survey questions on practice expenses and hours worked. Possible reasons for the low rate include the short field time and that the survey was conducted during the middle of summer, when many practitioners may be on vacation. These factors were necessitated by the timing of the release of the Interim Final Rule and the August 1st due date for the survey results.

Again, the low response rate raises questions as to the representativeness of the survey responders. To account for potential non-responders and non-response bias, the data were weighted using the same weighting approach taken by the AMA for the SMS survey. Weighting increased the total PE per hour value by roughly 2.8%. In addition, we compared the total PE per hour value obtained from the survey with the results from an independent survey conducted

[1] Please see Appendix A of this report for a more detailed explanation of the Level of Precision and "High" Response Rate calculations.

by SVS in 1998. The 1998 survey collected information on practice expenses and had 33 complete responses. Based on these responses, the (unweighted) average total PE per hour value was $84.01 compared to (unweighted average) $79.48 from the current survey.

The results differ by less than 10 percent. Despite some limitations in the survey methodology for the 1998 survey, we find this highly suggestive that a *strong non-response bias does not exist*. In addition, respondents appear to be geographically diverse. The overall practice expense GPCI average was 0.975.

- Without direct information about non-responders, assessing national representatives of the survey results is difficult. Our best efforts to examine representativeness suggest that a strong non-response bias *does not exist*.

Lewin recommendation on STS/AAVS practice expense survey

We believe that the SVS/AAVS survey was a well-conducted, methodologically sound survey. In addition, the results met the level of precision requirements specified by HCFA in the May 3rd Interim Final Rule. One potential problem with the survey, however, is the low response rate. Our assessment of the data suggests that a strong non-response bias does not exist. Therefore, we recommend that HCFA use the data submitted by SVS/AAVS.

IV. EVALUATION OF THE PHYSICAL THERAPY SUPPLEMENTAL PE SURVEY

1) ***Confidentiality***
2) ***Survey Instrument and Protocols***
3) ***Survey Contractor***

The Lewin team worked closely with APTA to find a contractor, develop and draw the sample, and develop the survey instrument. APTA provided us with a list of members and former members and Lewin drew the sample from these lists. The sample was provided directly to APTA's survey contractor. It is our view that APTA adhered to the confidentiality requirement in that APTA did not know the physical therapists included in the sample.

Lewin developed the survey instrument with input from the APTA. The 1999 SMS survey was used with some modifications. First, we made changes because the SMS survey is a physician survey. Second, we added some questions at the request of the APTA, primarily related to the business practices of physical therapists. However, the basic practice expense and hours-worked questions in the SMS survey were essentially unchanged.

APTA used the same survey contractor as SVS/AAVS and followed the same protocols.

- The Lewin team is satisfied that the APTA survey meets the requirements for ***Confidentiality, Survey Instrument and Protocols,*** and ***Survey Contractor***.

4) ***Level of Precision***[2]

The Lewin team compiled the results from the APTA survey and computed measures of level of precision for total practice expenses per hour and total practice expenses. As described in the May 3rd Interim Final Rule, the level of precision is measured by the standard error of the mean divided by the mean expressed as a percentage. This measure should not exceed 10 percent. The relevant APTA survey estimates are:

Level of Precision for Total Practice Expense per Hour for 1999 = 11.4%
Level of Precision for Total Practice Expenses for 1999 = 14.8%

- Neither level of precision measure for the APTA supplemental PE survey meet the ***Level of Precision*** specified in the May 3rd Interim Final Rule.

[2] Please see Appendix B of this report for a more detailed explanation of the Level of Precision, Random Sample and "High" Response Rate calculations.

5) ***Nationally Representative Survey of the Target Population of Physicians*:**

a) **Random sample from complete nationwide listing**

The sample for the APTA survey was derived from member and former member lists. The former member list was used to represent non-members. The lists are national and a random sample was extracted from them.

- While we recognize that using former members to represent non-APTA members has its limitations, we believe that the APTA survey makes use of the best available data for developing a nationally representative survey.

b) **"High" response rate**

The APTA survey achieved a low response rate. As noted in our presentation of the survey results to HCFA, we calculate that only approximately 11% (N=47) of potentially eligible respondents completed the survey questions on practice expenses and hours worked. Possible reasons for the low rate include the short field time and that the survey was conducted during the middle of summer, when many practitioners may be on vacation. These factors were necessitated by the timing of the release of the Interim Final Rule and the August 1st due date for the survey results.

Such a low response rate raises serious questions regarding the representativeness of the results. The key issue is- do non-responders have different practice expenses per hour than responders? To address this issue, we did the following: 1) developed weights for members and non-members; 2) examined how PE per hour varied with tenure as a physical therapist; and 3) examined the geographic dispersion of respondents.

The outcomes of the first two analyses have already been reported to HCFA (see Appendix B of this report). We summarize the findings from all three steps below:

- Total PE per hour for member and non-members varied little.

- Respondents and their associated practice expenses per hour varied in terms of their tenure as a physical therapist. The distribution of respondents by tenure seemed to match the distribution from a previous survey conducted by the APTA. Our assessment of the data suggest that using weights based on tenure would not have changed the overall PE per hour results significantly. (We did not attempt to develop weights based on tenure because we had no information about the population)

- Respondents appear to be geographically diverse. The overall practice expense GPCI average was 0.976.

- Without information about the population of physical therapists or information about non-responders, assessing national representatives of the survey results is difficult. Our best efforts to examine representativeness suggest that a *strong non-response bias does not exist*.

Lewin recommendation on APTA practice expense survey

We believe that the APTA survey was a well-conducted, methodologically sound survey. Nevertheless, two potential (related) problems with the survey were that the results did not meet HCFA's requirement for level of precision and the low response rate. Our assessment of the data suggests that a strong non-response bias does not exist. Given that, we recommend that HCFA accept the supplemental survey data submitted by the APTA. Although the level of precision requirement was missed by 1.4%, we do not find this difference sufficient to exclude the survey data submitted, particularly considering the lack of other available PE data for physical therapists.

V. DISCUSSION

Lewin believes that the timing of the surveys (i.e., short-field time and time of year) contributed to the low response rates. Going forward, groups will have more time to conduct surveys and, thus, are likely to obtain better response rates and improved precision. In addition, this effort was the first time a physician group and, even more noteworthy, a non-physician group conducted SMS-based surveys independent of the AMA. We are hopeful that lessons learned by Lewin, HCFA, and the specialty groups will serve as a source of information for future efforts of this kind. This all suggests that future surveys should be capable of achieving better results and should be more likely to achieve the requirements set forth in the May 3rd rule. HCFA should think about incorporating such considerations into its decision making process when evaluating whether or not to accept supplemental PE survey data in the future.

APPENDIX A

THE AMERICAN ASSOCIATION OF VASCULAR SURGERY AND SOCIETY FOR VASCULAR SURGERY PRACTICE EXPENSE SURVEY: METHODOLOGY AND RESULTS

Sample

In accordance with HCFA's methodology, a random sample was drawn from the AMA's Masterfile. The total sample size was 650. We received data from AAVS/SVS's contractor consisting of responses from 72 vascular surgeons who are currently part or full owners of their practices and who were part or full owners for all of 1999.

Response Rates

In calculating response rates we excluded cases with any individual practice expense item missing, where direct patient care hours information was missing, and cases where employee physicians' direct patient care hours in a week were less than 20. These adjustments reduced the sample size from 72 to 57 observations. These edits follow those set by HCFA, as described in the March 31, 1998 letter from the AMA that accompanied the original practice expense per hour values.

The response rate calculated for the SMS survey includes incomplete records and, therefore, would be based on the 72 responses. We have calculated response rates based on the number of complete responses only (57). Consequently, they are lower and not directly comparable to the SMS response rates.

We calculated response rates in a number of ways. In each case we excluded those cases screened out of the survey.

Our initial response rate (9.4%) was calculated by taking the ratio of the number of responding physicians (57) to the number of physicians in the original sample (650) after excluding the number of screened out cases (44).

Initial Response Rate: 57 / 606 = 9.4%

Screened out cases included:

- 1 with less than 20 hours per week in direct patient care;
- 4 who were not full or part owners of their practice in 1999;
- 33 who are not currently a full or part owner of the practice;
- 1 who did not have any non-cardiac vascular cases in the practice;
- 3 who are currently a full-time, salaried employee of a federal agency;
- 1 who did not derive most of his/her medical income from vascular surgery.

We believe, however, that this calculation of the response rate may be misleading because it includes all cases where a potential respondent did not complete the screener section of the survey. These non-contacted cases included individuals who were not available, individuals who were no longer involved with the practice, individuals with disconnected or incorrect telephone numbers, and individuals who refused to participate in the survey. Presumably, a proportion of these individuals would have been screened out had they completed the screener section of the survey.

531 of the 650 cases did not complete the screener questions. By taking the ratio of the number of screened out cases (44) to the number of all contacted cases (119) or cases who completed the screener questions, we estimated that 196 of the 531 cases would have been screened out had they been contacted. As a result, it may be more appropriate to only include 410 observations, which results in a response rate of 13.9%.

Adjusted Response Rate 1: 57 / 410 = 13.9%

We also did another calculation of the response rate by first eliminating those cases that had bad or incorrect contact information (82). It can be argued that these cases would be more likely than other non-contacted cases to have been screened out. We then recalculated our "Adjusted Response Rate 1".

Adjusted Response Rate 2: 57 / 374 = 15.2%

Methodology

Construction of Weights

We used the same methodology for weighting as the SMS survey in order to correct for potential non-response bias. The weights were first derived by dividing the AMA Physician Masterfile population and the survey respondents into 10 cells according to years in practice (5 categories) and AMA membership status (2 categories).[3] Unlike the SMS survey, the cells were defined by only 1 specialty category (vascular surgery) rather than 10 specialty categories. Unit response weights were constructed by taking the ratio of the number of physicians in the population to the number of survey respondents in each cell.

An eligibility correction was also used. Non-federal patient care physicians are eligible for the SMS survey. The eligibility weight was calculated by dividing the subset of the SMS population for which eligibility is known into 10 cells according to years in practice (5 categories) and AMA membership (2 categories) and determining what proportion of each cell was eligible for the survey.

[3] The AMA also creates sample weights based on a physician's board certification status and gender. However, these characteristics were folded into our 10 cells because all responding physicians were board certified and male.

The overall weight applied for a given respondent is the product of a unit response weight and an eligibility weight.

Edits

To calculate practice expense per hour values, we applied the edits set by HCFA, as described in the March 31, 1998 letter from the AMA that accompanied the original practice expense per hour values. These edits were as follows:

- Physicians practicing fewer than 26 weeks in 1999 (no records eliminated);
- Cases with missing data on hours of patient care (1 record eliminated);
- Cases with any of the individual practice expense items missing (14 records eliminated);
- Cases where total expenses were zero (no records eliminated);
- Cases where employees' direct patient care hours in a week were less than 20 (2 records eliminated).

After these edits, we used the remaining 57 cases to calculate practice expenses per hour.

Note: Of the 3 cases that were eliminated due to either missing data on hours of patient care or cases where employees' direct patient care hours in a week were less than 20, 2 of those cases were already eliminated due to missing individual practice expense items.

The application of the edits did not affect mean total practice expenses per hour. Weighted mean total practice expenses per hour was 81.68 for all observations and for complete observations.

Descriptive Statistics: All Observations

Practice Expenses in $ Thousands	**Mean (Weighted)**	**Std Error**	**N**	**Miss**	**No Exp ($0)**	**Max**	**Min**
Office expenses	54.83	4.92	72	0	0	242	2
Non-physician payroll expenses	115.27	12.10	72	0	2	624	0
Non-physician (administrative, secretarial and clerical) payroll expenses	54.38	7.91	70	2	15	437	0
Expenses for clinical materials and supplies	9.30	1.59	69	3	1	100	0
Expenses for clinical equipment	14.54	2.53	63	9	13	84	0
Other professional expenses	36.55	4.95	71	1	0	212	1
Direct Patient Care Hours							
Owners' direct patient care hours	58.31	1.41	71	1	-	80	20
Employees' direct patient care hours	55.59	2.75	24	4	-	70	20

Results (Complete Surveys)

We followed HCFA's methodology to the extent possible as detailed in the June 5, 1998 Federal Register. However, instead of asking employee physicians for their direct patient care hours, practice owners were asked to report average direct patient care hours for their employees. We also used information on the average number of weeks worked in a year for practice owners as a proxy for the number of weeks worked in a year for employee physicians.

Below we report weighted and non-weighted overall practice expense per hour values. There was only a slight difference in the mean total practice expenses per hour for weighted (81.68) and unweighted (79.48) observations.

VASCULAR SURGERY PRACTICE EXPENSE SURVEY: 1999 DOLLARS COMPLETE OBSERVATIONS (N = 57)		
PRACTICE EXPENSES PER HOUR	**Weighted Mean**	**UNWEIGHTED MEAN**
Office expenses	19.25	18.97
Non-physical therapists (administrative, secretarial and clerical) payroll expenses	19.66	18.95
Clinical payroll expenses	22.00	21.52
Expenses for clinical materials and supplies	3.46	3.55
Expenses for clinical equipment	4.93	4.67
Other professional expenses	12.37	11.81
Total practice expenses per hour	81.68	79.48

Level of Precision (Complete surveys)

The level of precision for the total and individual practice expenses and per hour values was calculated using the measure defined in the May 3, 2000 Federal Register (i.e., standard error/mean). Our level of precision for total practice expenses per hour (7.1%) is within the level of precision set by HCFA (10%). Similarly, our level of precision for total practice expenses (8.4%) also meets HCFA's criteria for precision (10%).

Variable	**MEAN (WEIGHTED)**	**STANDARD ERROR**	**PRECISION (STANDARD ERROR / MEAN)**
*Total Practice Expenses Per Hour for 1999	81.68	5.76	7.1%
*Total Practice Expenses for 1999	247441.53	20685.85	8.4%
PRACTICE EXPENSES PER HOURS FOR 1999			
Office Expenses	19.25	1.87	9.7%
Non-physician (administrative, secretarial and clerical) payroll	19.66	2.46	12.5%
Clinical payroll expenses	22.00	2.30	10.5%
Expenses for clinical materials and supplies	3.46	0.66	19.1%
Expenses for clinical equipment	4.93	0.92	18.7%
Other professional expenses	12.37	2.00	16.2%
PRACTICE EXPENSES IN THOUSANDS FOR 1999	**MEAN (WEIGHTED)**	**STANDARD ERROR**	**PRECISION (STANDARD ERROR / MEAN)**
Office expenses	57.69	5.94	10.3%
Non-physician payroll expenses	127.59	14.12	11.1%
Non-physician (administrative, secretarial and clerical) payroll expenses	59.94	9.41	15.7%
Expenses for clinical materials and supplies	10.13	1.88	18.6%
Expenses for clinical equipment	15.40	2.75	17.9%
Other professional expenses	36.63	5.72	15.6%

APPENDIX B

THE AMERICAN PHYSICAL THERAPY ASSOCIATION PRACTICE EXPENSE SURVEY: METHODOLOGY AND RESULTS

Sample

Because physical therapists are not included in the AMA's Masterfile, the sample was drawn from APTA's membership and former-membership lists. The APTA was able to identify practice owners from each of these lists.

- Out of 48,000 members, 5,217 (11%) were owners.
- Out of 15,800 on the former member list, 393 (2.5%) were owners.

A sample of members was randomly selected from the list of 5,217 owners. All former members who were identified as owners were selected to be surveyed, excluding a small number of former-member owners without any contact information (16).

The final sample consisted of 704 owners from the APTA membership lists.

Response Rates

We received data from APTA's contractor consisting of responses from 73 privately practicing physical therapists who are currently part or full owners of their practices and who were part or full owners for all of 1999. However, our sample excluded cases with any individual practice expense item missing (23 records eliminated) and cases where employee physical therapists' direct patient care hours in a week were less than 20 (3 records eliminated), thereby reducing our sample to 47 observations. These edits follow those set by HCFA, as described in the March 31, 1998 letter from the AMA that accompanied the original practice expense per hour values.

The response rate calculated for the SMS survey includes incomplete records and, therefore, would be based on the 73 responses. We have calculated response rates based on the number of complete responses (47). Consequently, they are lower and not directly comparable to the SMS response rates.

We calculated response rates a number of ways. In each case we excluded those cases screened out of the survey.

Screened out cases included:

- 22 non-physical therapists;
- 15 with less than 20 hours per week in direct patient care;
- 4 whose practices were part of a rehabilitation agency;
- 2 who were not full or part owners of their practice in 1999;
- 4 who were not owners for the entire year of 1999.

We first calculated the response rate by taking the ratio of observations in our sample (47) to the total sample (704), excluding screened out cases (47).

Initial Response Rate: 47 / 657 = 7.2%
(all observations)

We believe, however, that this calculation of the response rate may be misleading because it includes all 583 cases where a potential respondent did not complete the screener section of the survey. These non-contacted cases included individuals who were not available, individuals who were no longer involved with the practice, individuals with disconnected or incorrect telephone numbers, and individuals who refused to participate in the survey. Presumably, a proportion of these individuals would have been screened out had they completed the screener section of the survey. By taking the ratio of the screened out cases (47) to all contacted cases (121), we estimated that 226 of the 583 cases would have been screened out had they been contacted. As a result, only 431 cases should be included in the total sample, thereby increasing the response rate.

Adjusted Response Rate 1: 47 / 431 = 10.9%
(all observations)

We also did another calculation of the response rate by first eliminating those cases that had bad or incorrect contact information (178). It can be argued that these cases would be more likely than other non-contacted cases to have been screened out. We then recalculated our "Adjusted Response Rate 1".

Adjusted Response Rate 2: 47 / 340 = 13.8%

Members versus Former Members

Of the 47 complete observations in our sample, 29 of the respondents were members and 18 were former members. The total sample for members was 327 and the total sample for former members was 377. Using the same methods stated above to account for the cases that would have been screened out had they been contacted, we report response rates for members and former members below.

Member response rates:

Initial Response Rate: 29 / 304 = 9.5%

Adjusted Response Rate 1: 29 / 229 = 12.7%

Adjusted Response Rate 2: 29 / 209 = 13.9%

Former member response rates:

Initial Response Rate: 18/ 353 = 5.1%

Adjusted Response Rate 1: 18 / 172 = 10.5%

Adjusted Response Rate 2: 18 / 148 = 12.2%

Methodology

Construction of Weights

According to the APTA, there are approximately 100,000 physical therapists identified in the U.S. based on state licensing agencies. Since 48,000 of those physical therapists are members, we therefore estimate that 52,000 physical therapists are non-members in the population. Using this information, we constructed weights for members and non-members. (No other information is known about the universe. As a result, we could only construct weights for members and non-members due to a lack of information on the population.)

We estimate that the population of physical therapists consists of 5,217 owners who are APTA members and 1,295 owners who are not members. To estimate the number of non-member owners, we used the percent of former member owners identified from the APTA's former member list (2.5%) and the estimated number of physicial therapists who are not members of APTA. We multiplied 52,000 (non-members) by 2.5% to estimate that there are 1,295 non-members who are owners.

Separate weights were constructed for complete observations in our sample. Complete observations include only those observations where data were available on all practice expense and hours survey items. For members in our complete sample, we took the ratio of members in our population (5,217) to members in our sample (29). The weight for members in our sample with complete observations was 179.9.

Member Weight = 5,217 / 29 = 179.9

For former members, we took the ratio of former members in our population (1,295) to former members in our sample (18). The weight for former members in our sample with complete observations was 71.9.

Former Member Weight = 1,295 / 18 = 71.9

Diagnostic Evaluation of Weights

Although we could not construct weights along dimensions other than member/non-member, we examined the distribution of practice expense per hour values to get a sense of how weights may have affected the overall average. We collapsed the variable for the year in which respondents began practicing physical therapy into four categories: (1) 1960-1970, (2) 1971-1980, (3) 1981-1990, (4) 1991-1998. (The AMA bases weights on this information for the SMS survey). Practice expense per hour values for these categories are reported in the table below.

Year Began Practicing Physical Therapy (complete observations)	Mean Total Practice Expenses Per Hour (weighted)	N = 47	% of Total
(1) 1960 - 1970	31.35	6	13%
(2) 1971 – 1980	48.10	17	36%
(3) 1981 - 1990	56.05	16	34%
(4) 1991 - 1998	36.79	8	17%

Results for these four categories were quite different from total mean practice expenses per hour for all complete observations (47.54), which suggest that weights may matter. However, if the distribution of the sample were equal to the distribution of the population, the weights would not make much of a difference.

The majority of responders fall in the middle two categories (1971 –1980 and 1981 – 1990). The fact that a smaller proportion of physical therapists fell into the first category (1960 – 1970) was expected; as practitioners get older they are more likely to leave the profession, retire, or die. The small percentage of physical therapists in the last category (1991 – 1998) is also consistent with the view that younger physical therapists are more likely to be employees of a practice than an owner.

The practice expense per hour value for physical therapists in group 3 is higher than the overall average. There is very little difference in the practice expense per hour value for group 2 and the overall average. The practice expense per hour values for groups 1 and 4 are less than the overall average. Thus, if groups 1 and 4 are under-represented, then the overall average may be overstated. If groups 2 and 3 are under-represented, then the overall average may be understated. Without information on the population of physical therapists, it is difficult to know how the reported overall average would compare to a weighted average, where the weights were based on the year a physical therapist began practicing. However, based on information provided to us by the APTA, we do not believe that the distribution for the sample is materially different from the distribution for the population.

Edits

To calculate practice expense per hour values, we applied the edits set by HCFA, as described in the March 31, 1998 letter from the AMA that accompanied the original practice expense per hour. These edits were as follows:

- Physical therapists practicing fewer than 26 weeks in 1999 (1 record eliminated);
- Cases with missing data on hours of patient care;
- Cases with any of the individual practice expense item missing (23 records eliminated);
- Cases where total expenses were zero;
- Cases where employee physical therapists worked less than 20 hours a week in direct patient care (3 records eliminated).

After these edits, we used the remaining 47 cases to calculate practice expenses per hour.

The application of the edits hardly affected mean total practice expenses per hour (47.48 for all observations versus 47.54 for complete observations).

Descriptive Statistics: All observations

Practice Expense Category in $ Thousands	**Mean (weighted)**	**Standard Error**	**N**	**Miss**	**No Expenses ($0)**	**Max**	**Min**
Office expenses	43.42	6.34	71	2	1	333	0
Non-physical therapists payroll expenses	58.89	7.05	71	2	13	383	0
Non-physical therapists (administrative, secretarial and clerical) payroll expenses	23.67	4.49	71	2	37	200	0
Expenses for clinical materials and supplies	10.50	2.05	68	5	3	100	0
Expenses for clinical equipment	11.11	2.33	55	18	7	80	0
Other professional expenses	33.10	10.43	70	3	0	608	1
Direct Patient Care Hours							
Owners' direct patient care hours	40.48	1.23	71	2	-	70	20
Employees' direct patient care hours	34.93	1.44	32	0	-	45	20

Results (Complete Surveys)

We followed HCFA's methodology to the extent possible as detailed in the June 5, 1998 Federal Register. However, instead of asking employee therapists for their direct patient care hours, practice owners were asked to report average direct patient care hours for their employees. We also used information on the average number of weeks worked in a year for practice owners as a proxy for the number of weeks worked in a year for employee physical therapists.

Below we report weighted (for member/non-member status) and non-weighted overall practice expense per hour values. There is almost no difference in the mean total practice expenses per hour for weighted (47.54) and unweighted (47.33) observations, indicating little overall difference in practice expenses for member and non-members of APTA.

Physical Therapy practice Expense Survey: 1999 Dollars Complete observations (n=47)		
Practice Expenses per hour	Weighted Mean	Unweighted Mean
Office expenses	12.08	13.32
Non-physical therapists (administrative, secretarial and clerical) payroll expenses	8.11	7.63
Clinical payroll expenses	11.24	10.97
Expenses for clinical materials and supplies	3.25	3.06
Expenses for clinical equipment	2.91	2.92
Other professional expenses	9.95	9.43
Total Practice Expenses Per Hour	47.54	47.33

Level of Precision

We calculated the level of precision for the total and individual practice expenses and per hour values using the measure defined in the May 3, 2000 Federal Register (i.e., standard error/mean). The level of precision for total practice expenses per hour (11.7%) and for total practice expenses (14.8%) did not meet HCFA's requirement of 10%.

Variable	Mean (weighted)	Standard Error	Precision (Standard Error/Mean)
* Total Practice Expenses Per Hour for 1999	47.54	5.58	11.7%
* Total Practice Expenses for 1999	178441.63	26441.52	14.8%
Practice Expenses Per Hour for 1999			
Office expenses	12.08	1.70	14.1%
Non-physical therapists (administrative, secretarial and clerical) payroll expenses	8.11	2.30	28.4%
Clinical payroll expenses	11.24	1.94	17.3%
Expenses for clinical materials and supplies	3.25	0.95	29.2%
Expenses for clinical equipment	2.91	0.80	27.5%
Other professional expenses	9.95	2.48	24.9%
Practice Expenses in Thousands for 1999			
Office expenses	44.99	7.76	17.2%
Non-physical therapist payroll expenses	67.81	8.77	12.9%
Non-physical therapists (administrative, secretarial and clerical) payroll expenses	27.70	5.91	21.3%
Expenses for clinical materials and supplies	10.91	2.47	22.6%
Expenses for clinical equipment	10.22	2.31	22.6%
Other professional expenses	44.51	15.70	35.3%